FIG. 1A

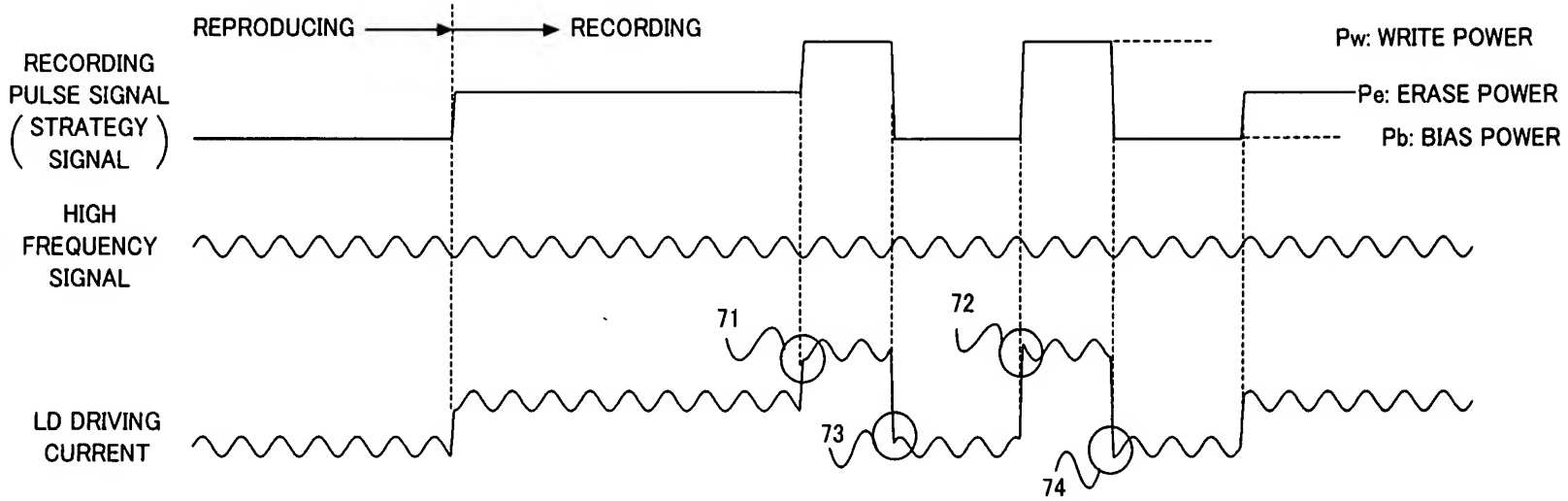
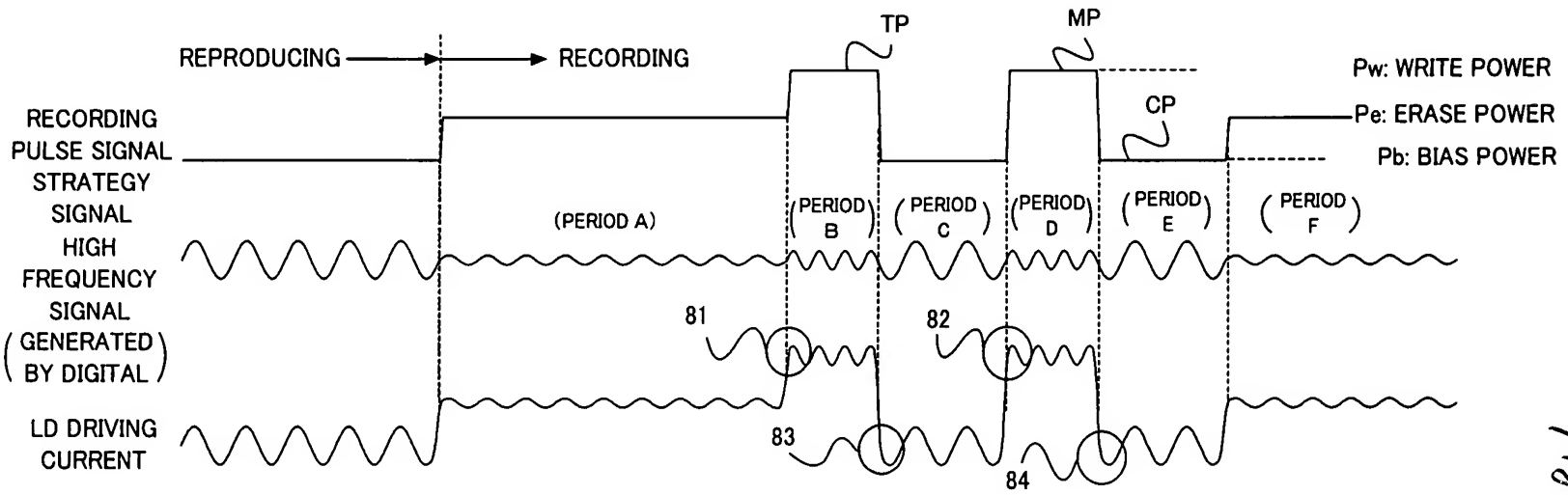


FIG. 1B



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Figs. 1-11

FIG. 2

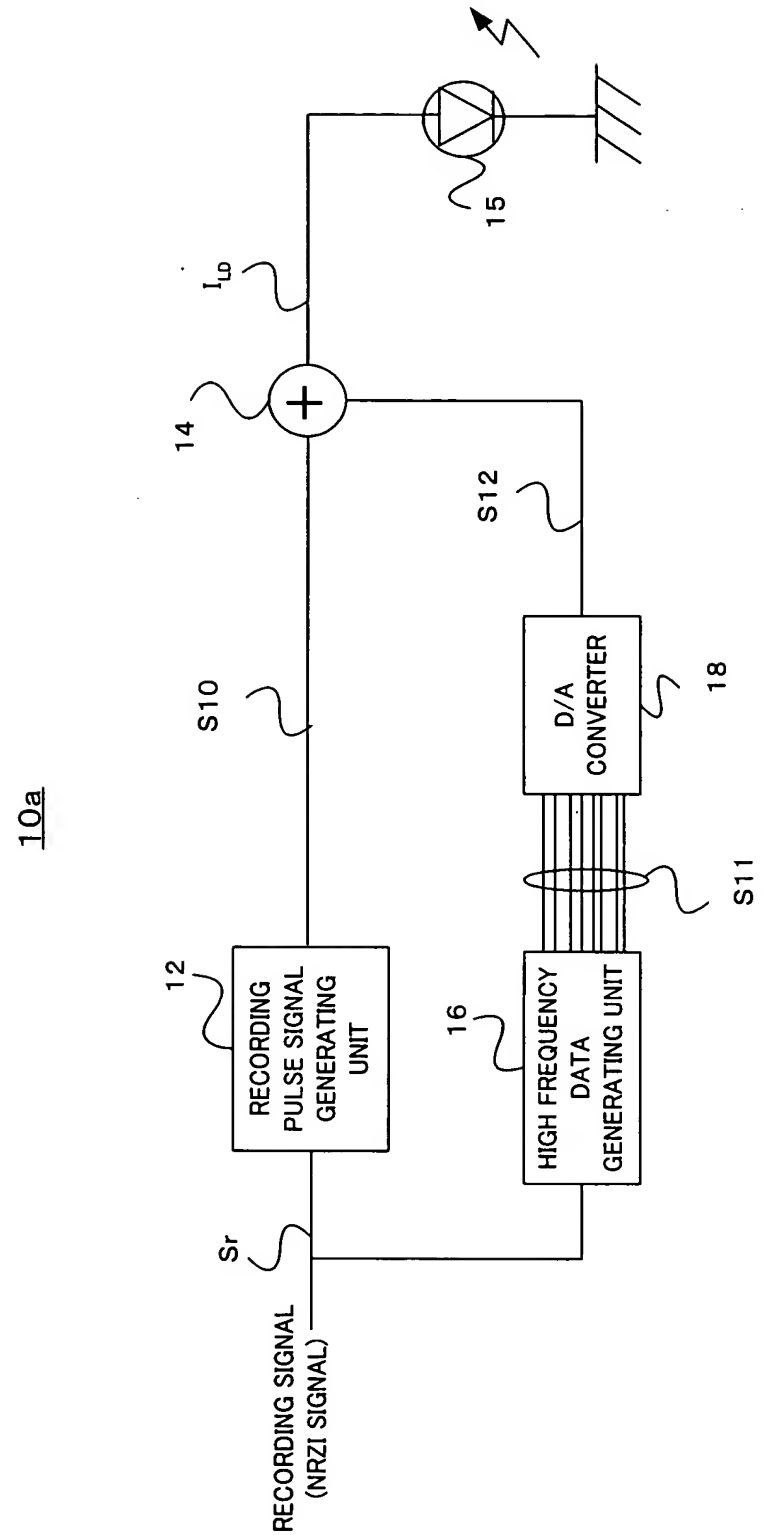
10a
RECORDING SIGNAL (NRZI SIGNAL)
Sr
12
RECORDING PULSE SIGNAL GENERATING UNIT
S10
14
I_{LD}
15
16
HIGH FREQUENCY DATA GENERATING UNIT
S11
18
D/A CONVERTER
S12

FIG. 3

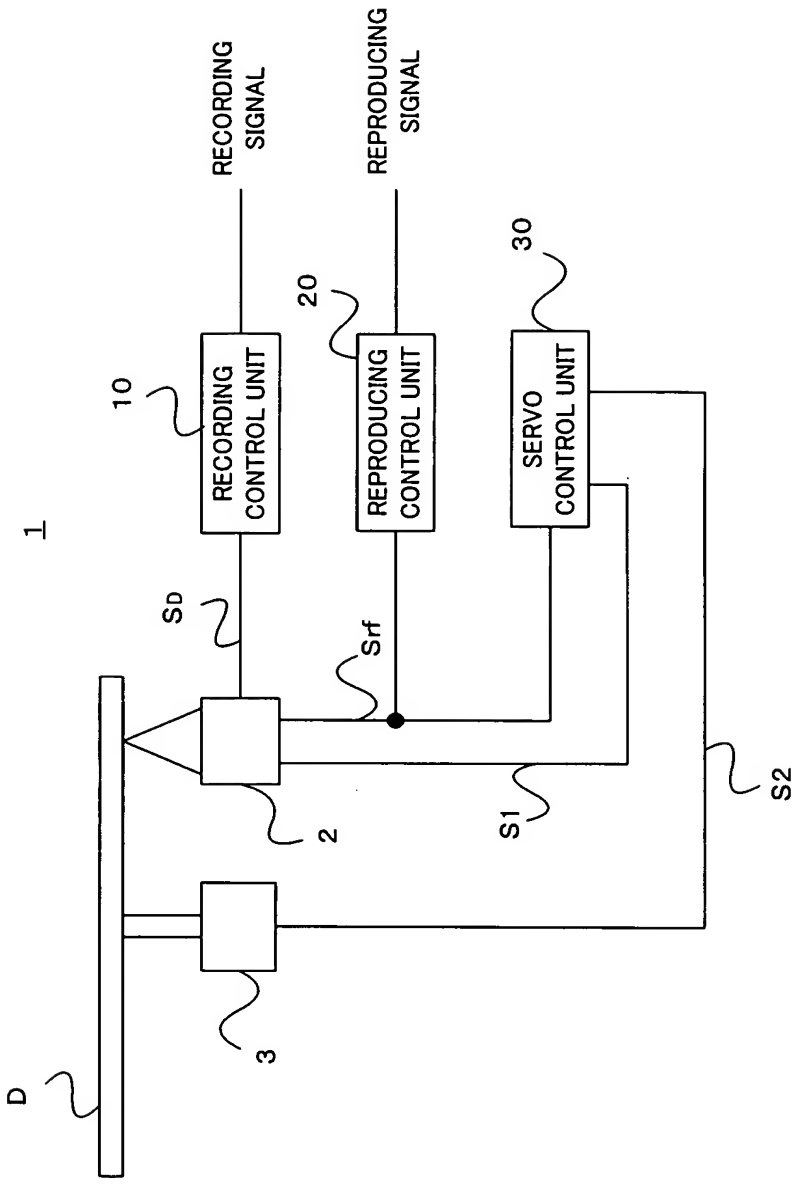
1
RECORDING SIGNAL
REPRODUCING SIGNAL
10
RECORDING CONTROL UNIT
20
REPRODUCING CONTROL UNIT
30
SERVO CONTROL UNIT
SD
Srf
S1
S2
2
3
D

FIG. 4

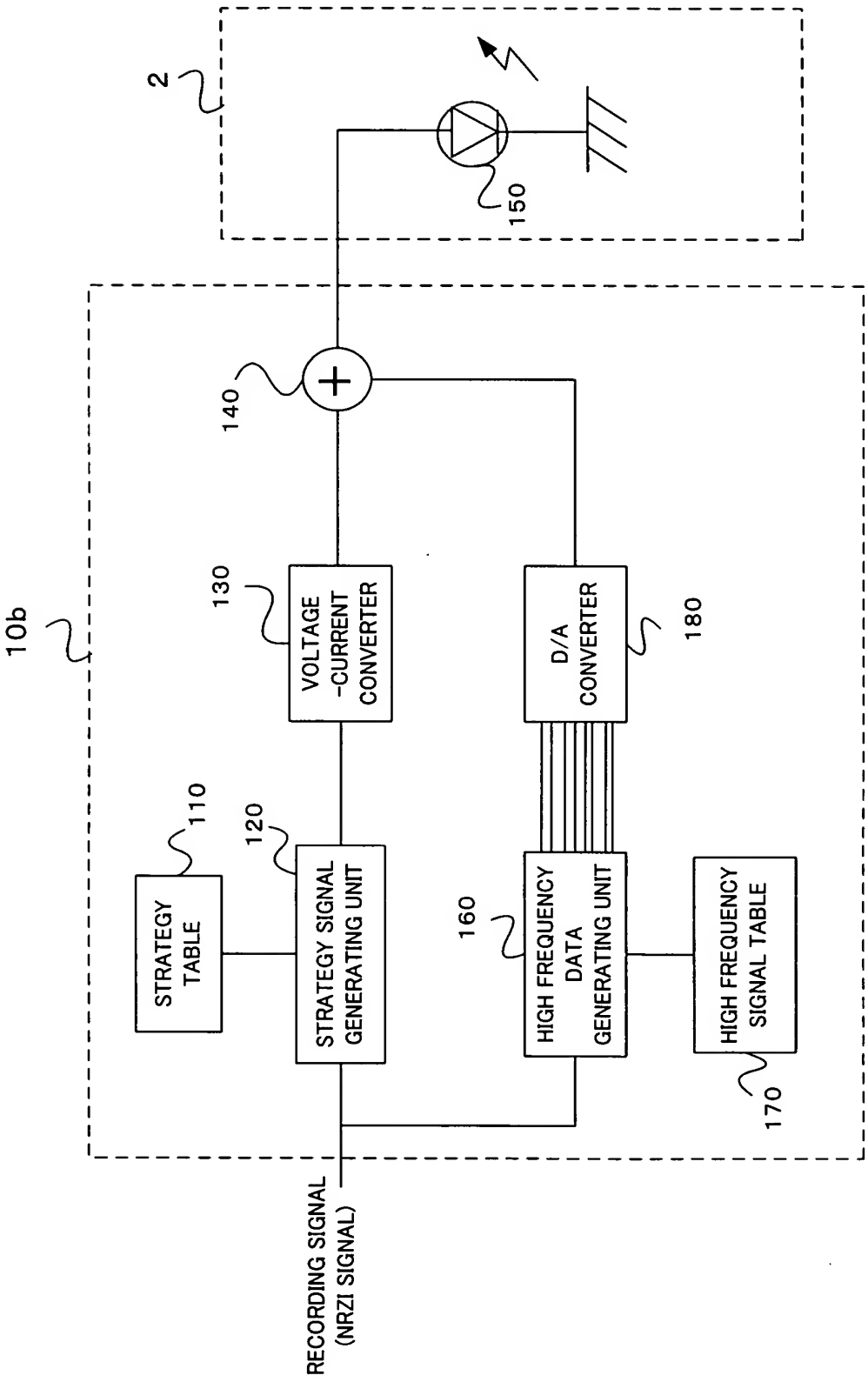
2
150
10b
140
130
VOLTAGE -CURRENT CONVERTER
D/A CONVERTER
180
110
120
STRATEGY TABLE
STRATEGY SIGNAL GENERATING UNIT
160
HIGH FREQUENCY DATA GENERATING UNIT
HIGH FREQUENCY SIGNAL TABLE
170
RECORDING SIGNAL (NRZI SIGNAL)

FIG. 5

(EXAMPLE OF HIGH FREQUENCY SIGNAL TABLE)

RECORDING MARK LENGTH

FRONT SPACE LENGTH (Ts \ Tm)	3T	4T	LARGER THAN 5T
3T	D33	D34	D35
4T	D43	D44	D45
LARGER THAN 5T	D53	D54	D55

FIG. 6

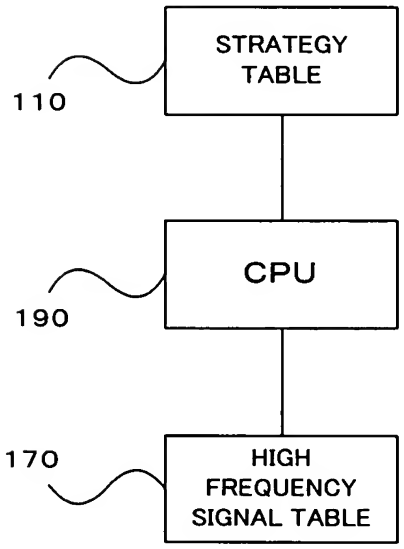

FIG. 7

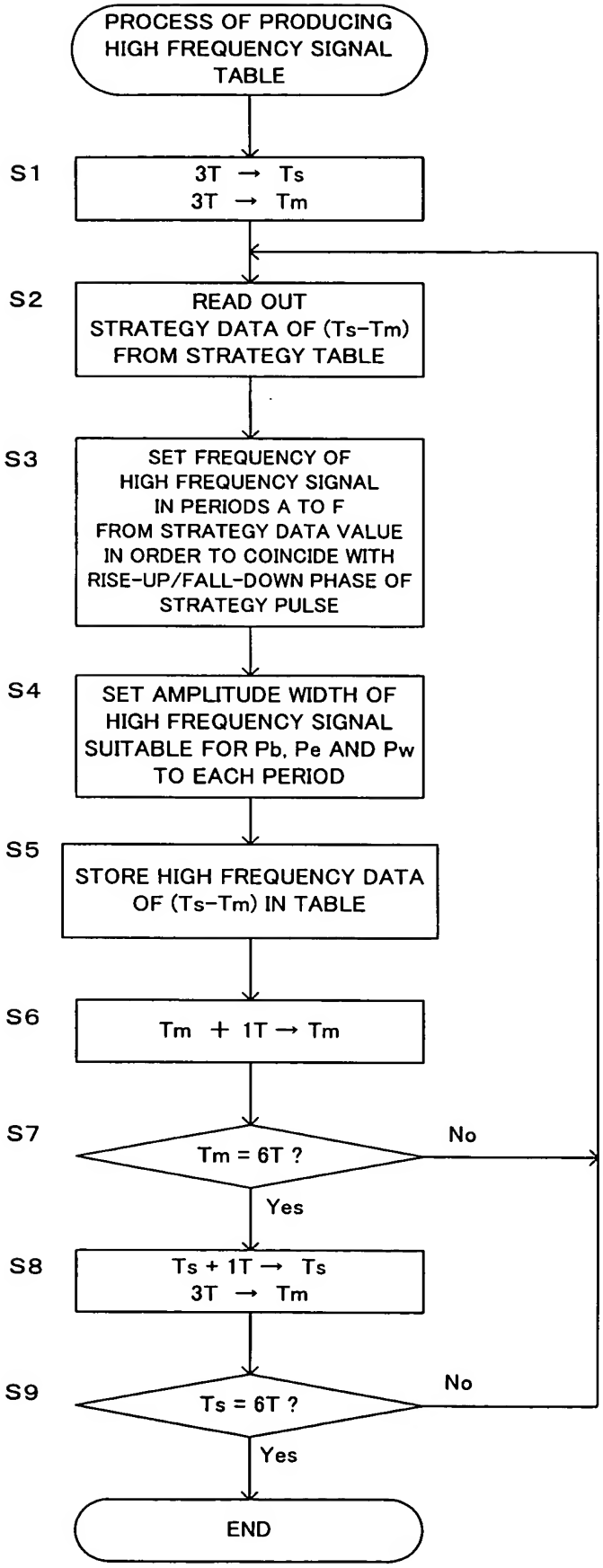
PROCESS OF PRODUCING HIGH FREQUENCY SIGNAL TABLE
S1
3T → Ts
3T → Tm
S2
READ OUT STRATEGY DATA OF (Ts-Tm) FROM STRATEGY TABLE
S3
SET FREQUENCY OF HIGH FREQUENCY SIGNAL IN PERIODS A TO F FROM STRATEGY DATA VALUE IN ORDER TO COINCIDE WITH RISE-UP/FALL-DOWN PHASE OF STRATEGY PULSE
S4
SET AMPLITUDE WIDTH OF HIGH FREQUENCY SIGNAL SUITABLE FOR Pb, Pe AND Pw TO EACH PERIOD
S5
STORE HIGH FREQUENCY DATA OF (Ts-Tm) IN TABLE
S6
Tm + 1T → Tm
S7
Tm = 6T ?
No
Yes
S8
Ts + 1T → Ts
3T → Tm
S9
Ts = 6T ?
No
Yes
END

FIG. 8A

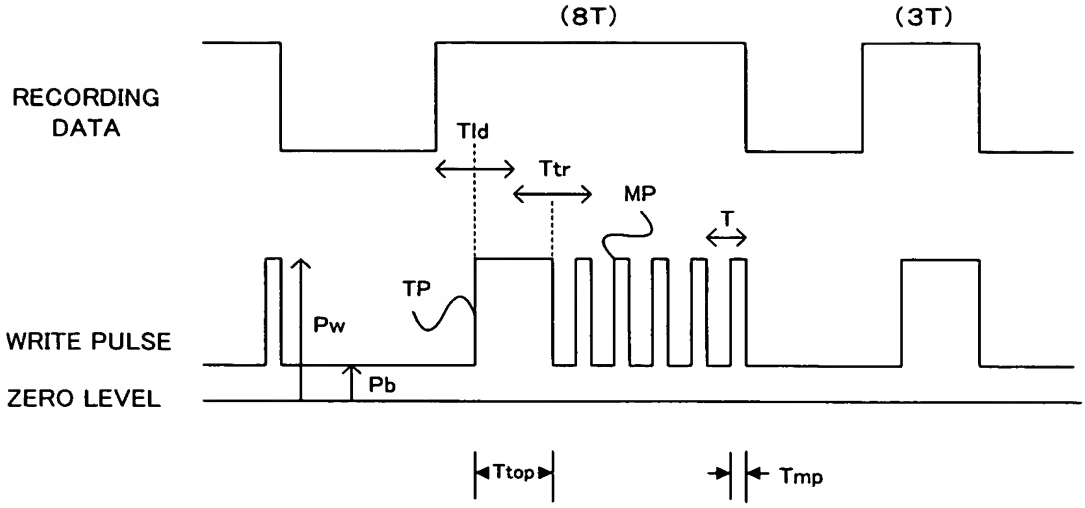
(8T)
(3T)
RECORDING DATA
Tld
Ttr
MP
T
TP
Pw
WRITE PULSE
Pb
ZERO LEVEL
Ttop
Tmp

FIG. 8B

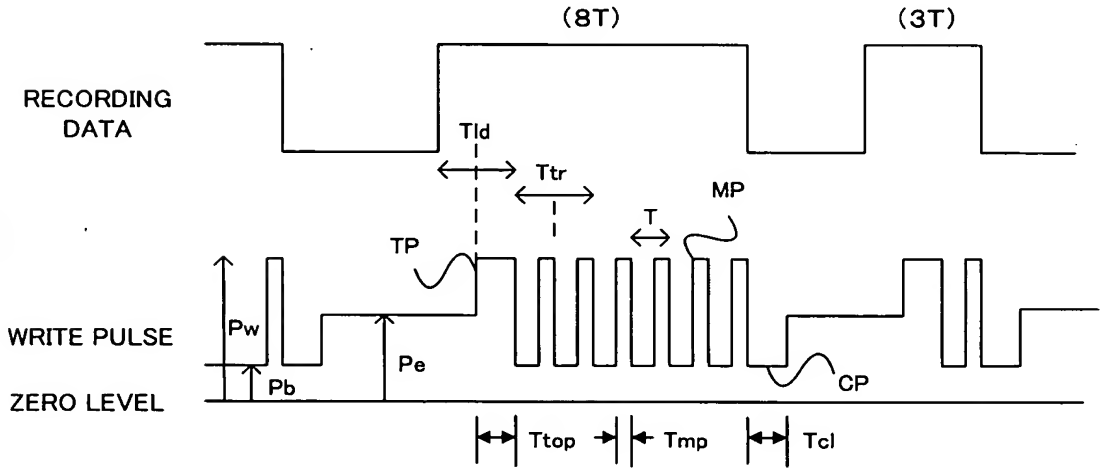
(8T)
(3T)
RECORDING DATA
Tld
Ttr
MP
T
TP
Pw
WRITE PULSE
Pe
Pb
CP
ZERO LEVEL
Ttop
Tmp
Tcl

FIG. 9

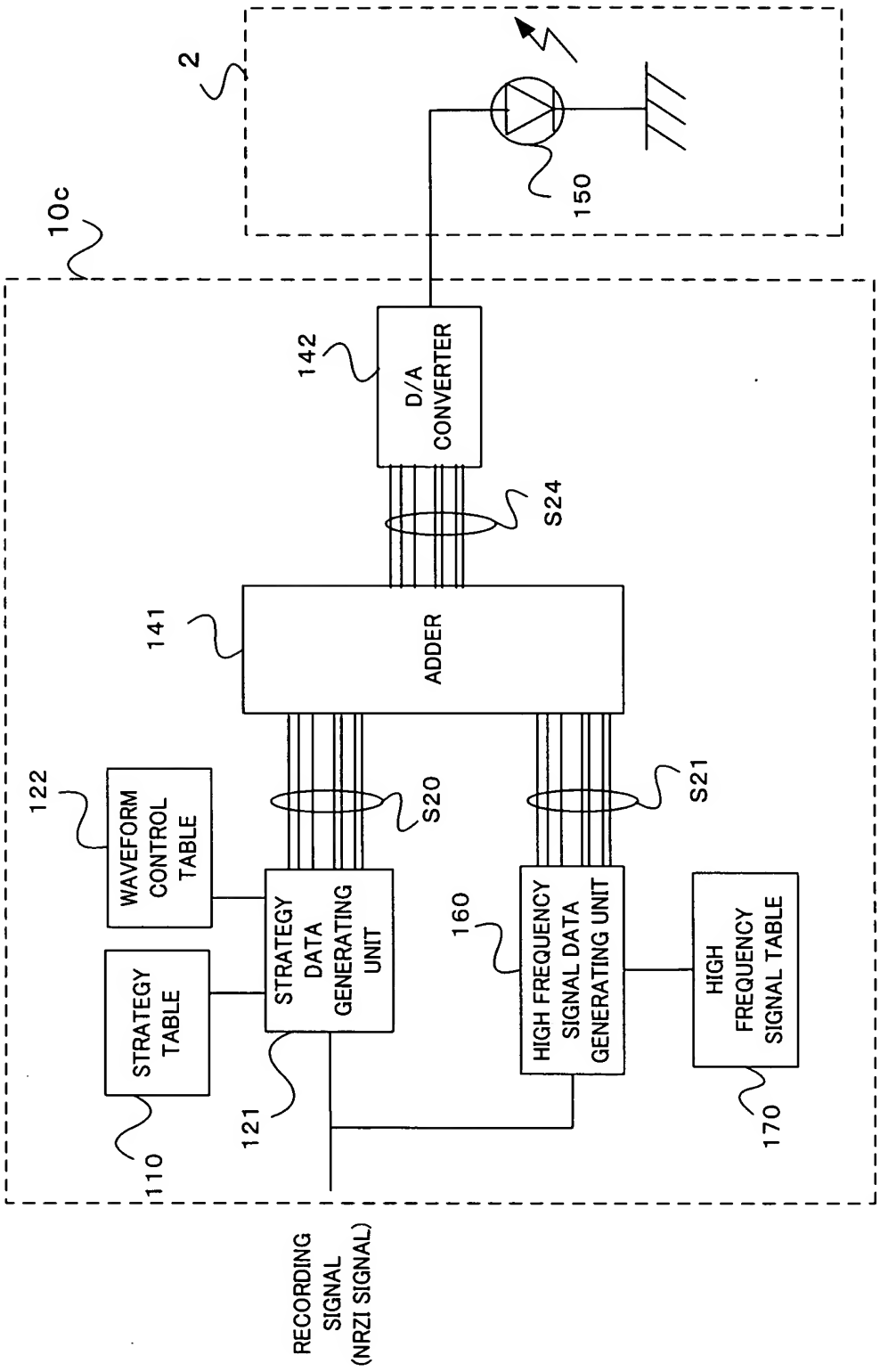
2
10c
150
142
D/A CONVERTER
S24
141
ADDER
122
WAVEFORM CONTROL TABLE
S20
S21
STRATEGY TABLE
STRATEGY DATA GENERATING UNIT
160
HIGH FREQUENCY SIGNAL DATA GENERATING UNIT
HIGH FREQUENCY SIGNAL TABLE
110
121
170
RECORDING SIGNAL (NRZI SIGNAL)

FIG. 10

<EXAMPLE OF WAVEFORM CONTROL TABLE >

PULSE WIDTH [T]	RECORDING POWER [mW]										
	10	11	12	13	14	15	16	17	18	19	20
0. 10	D10	D11	D12	D13	...	...	...	...	...	...	D20
0. 20	D20	D21	...	...	...	...	...	...	...	...	D30
0. 30	D30	D31	...	...	...	...	...	...	...	...	...
0. 40	D40	...	...	...	...	...	...	...	...	...	...
0. 50	D50	...	...	...	...	...	...	...	...	...	...
0. 60	D60	...	...	...	...	...	...	...	...	...	...
0. 70	D70	...	...	...	...	...	...	...	...	...	...
0. 80	D80	...	...	...	...	...	...	...	...	...	...
0. 90	D90	D91	...	...	...	...	...	...	...	...	...
1. 00	D100	D101	...	...	...	...	...	...	...	...	D120

FIG. 11A

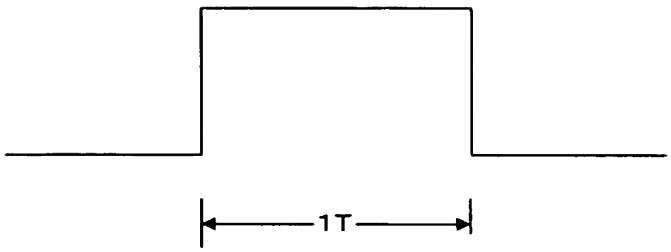

FIG. 11B

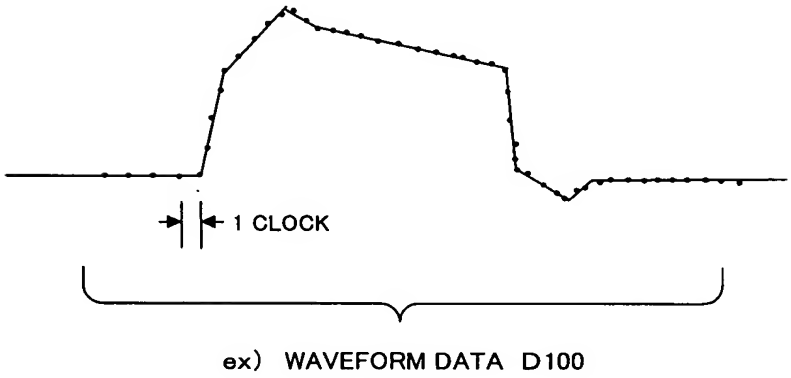
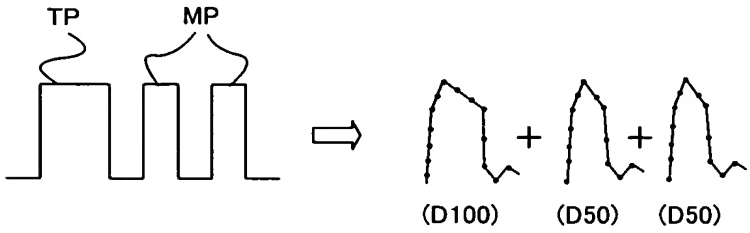
FIG. 11C